



# Village Power '98:

Scaling Up Electricity Access  
for Sustainable  
Rural Development



Convened by the National Renewable Energy Laboratory  
In collaboration with the World Bank  
World Bank Headquarters, Washington, D.C.  
October 6-8, 1998

## Co-Sponsors:

U.S. Agency for International Development  
U.S. Department of Energy  
Winrock International

## Village Power '98

### Tuesday, October 6, 1998

- 08:00-09:00 Registration
- 09:00-09:30 **Opening Session**
- Caio Koch-Weser, *Managing Director, World Bank*
  - Richard Truly, *Director, National Renewable Energy Laboratory*
  - Allan Hoffman, *U.S. Department of Energy*
- 09:30-10:00 **Keynote Addresses**
- Tim Wirth, *Director, UN Foundation*
  - Ambassador Leonard Spearman, *Director, Renewable Energy for African Development*
- 10:00-10:15 Break
- 10:15-11:15 **Defining the Problem: Scaling-up Electricity Access for Sustainable Rural Development - Chair, Callisto Madavo, Vice President for Africa, World Bank**
- The Asia Challenge - Mieko Nishimizu, *Vice President, South Asia, World Bank*
  - Latin America and Caribbean Needs for Rural Energy – Ambassador Christopher Thomas, *Assistant Secretary General, Organization of American States*
  - The Challenge and Needs in Africa - Mark Tomlinson, *World Bank*
- 11:15-12:00 **Meeting the Challenge to Rural Access - Chair, James Bond, World Bank**
- Private Sector Strategy to Increase Rural Electricity Access – Herre Hoekstra, *Shell Renewables*
  - UN Sustainable Energy Initiative - Susan McDade, *Energy and Atmosphere Programme, SEED and UNDP*
  - Renewable Energy Finance: Matching Resources and Needs- Michael Allen, *E&CO*
  - Technology Options for Meeting Rural Electricity Needs - Larry Flowers, *NREL*
- 12:00-12:30 **1998 Village Power Road Warrior Award - By 1997 Village Power Road Warrior, Bud Annan**
- 12:30-14:00 Lunch
- 14:00-16:00 **Organizing for Scaling-up Electricity Access; Models for Sustainable Energy Delivery - Chair, Karl Jechoutek, World Bank**
- Key Issues in Scaling-up Rural Electricity Access - Arun Sanghvi, *World Bank*
  - Scaling-up Rural Photovoltaic Enterprises in Emerging Market Economies: *The Case of China - Nouredine Berrah, World Bank*
  - Mexico: Achieving Universal Coverage - Carlos Gonzáles, *CFE, Mexico*
  - Brazil Prodeem Program – Eugenio Mancini, *National Department of Energy Development (DNDE), Brazil*
  - South Africa ESKOM Renewable Energy Experience - Thulani Gcbashe, *ESKOM*
  - Solar Electric Energy Delivery - A Business Model- Richard Hansen, *SOLUZ, Inc.*
- 16:00-16:30 Break
- 16:30-18:00 **Panel Discussion: Roles and Consequences of Bilateral Donor Programs - Chair, Matthew Mendis, AED**
- USA - Jeff Seabright, *USAID*
  - Netherlands - Paul Hassing, *DGIS*
  - Australia - Robert Glasser, *AUSAID*
  - International Energy Agency - Bernard McNelis, *IT Power*
  - United Kingdom – Clive Caffel, *DFID*
- 18:00-20:00 **Poster Session and Reception in the Atrium of the World Bank**

### Wednesday, October 7, 1998

- 08:00-09:00 Registration
- 09:00-11:00 **Promoting Productive Uses and Small Businesses for Rural Development - Chair, Khalid Siraj, World Bank**
- Promoting Productive Uses through Rural Enterprise Development - Jim Finucane, *Indonesia SHS Project Support Group*
  - Energy's Role in Rural Income Generation: The Grameen Strategy - Dipal Barua, *Grameen Bank*
  - Productive Uses of Electricity: Country Experiences - David Kittleson, *NRECA*

### Wednesday, October 7, Continued

- Small Scale Village Electrification; an NGO Perspective - *Donella Bryce, Appropriate Technologies for Community and Environment*
- Capacity Building for Small Scale Rural Development - *John Kadyszewski, Winrock*
- Gender Poverty and Rural Electrification – *Elizabeth Cecelski, Consultant*
- 11:00-11:30 Coffee Break
- 11:30-13:00 **Panel Discussion: Role of Electric Utilities in Rural Electrification** - *Chair, Allan Hoffman, U.S. Department of Energy*
  - Good Practices in Grid-Based Rural Electrification - *Doug Barnes, World Bank*
  - Decentralized Rural Electrification - *Wolfgang Mostert, Consultant*
  - Utility Challenge for Distributed Generation - *Carl Weinberg, Consultant*
  - Utility Response:
    - Edison Technology Solutions - *Jim Reilly*
    - EJSERDA in Argentina - *Daniel Angel Sandoval*
    - South Africa ESKOM - *Thulani Gcbashe*
    - Arizona Public Service (APS) - *Peter Johnston*
    - NRECA - *Pete Smith*
- 13:00-14:00 Lunch
- 14:00-16:00 **Power Supply Options for Decentralized Rural Electrification** - *Chair, Judy Siegel, World Bank*
  - PV Applications for Sustainable Rural Development - *Peter McKenzie*
  - Decentralized Rural Electrification in Zimbabwe - *Alex Makomva, ZESA*
  - Lessons Learned in Battery Charging Stations - *Stephen Graham, Consultant*
  - Small Wind for Village Power - *Michael Bergey, Bergey Windpower*
  - Biomass Gasification for Village Power - *Ralph Overend, NREL*
  - Hybrid Power Systems in the Australian Outback - *Stephen Phillips, AES Australia*
  - Diesel Retrofits: The Alaskan Experience - *Richard Emerman, Alaskan State Energy Office*
  - Micro-hydro Mini-Grids - *Andrew Barnett, Intermediate Technology Development Group*
- 16:00-16:30 Coffee Break
- 16:30-18:00 **Rural Energy Service Models** - *Chair, Jerry Weingart, Weingart & Associates*
  - Concessions: The Argentina Experience - *Aldo Fabris, Ministry of Energy, Argentina*
  - Sunlight Power International Approaches in Morocco - *Jeff Serfass and Dr. Abdelhanine Benallou, SunLight Power Morocco*
  - Battery Charging in Brazil - *Michael Davis, Golden Genesis*
  - Transition from NGO to Profit-making Enterprise - *Priyantha Wijesooriya, Sri Lanka*
  - Challenges for Viable RESCOs - *Art Lilley, Community Power Corporation*
  - Empowering Rural Villages - *Charlie Gay, ASE Americas*
- 18:00-20:00 **Reception in the H - Building Cafeteria of the World Bank**

### Thursday, October 8, 1998

- 09:00-11:00 **Financing Scale-up of Rural Electricity Access and Expanding Renewable Energy Markets** - *Chair, Paul Hassing, DGIS, The Netherlands*
  - Effective Intermediation: Experience in Asia RE Projects - *Jim Finucane, Indonesia SHS Support Group*
  - Structuring and Justifying Financial Incentives - *Subodh Mathur, Consultant*
  - Inter-American Development Bank Experience in Renewable Energy Financing for Rural Development - *Inter-American Development Bank*
  - World Bank Initiatives - *Charles Feinstein & Dana Younger, The World Group*
- 11:00-11:30 Coffee Break
- 11:30-12:00 **Closing Statements** - *Chair, Alistair McKechnie, World Bank*
  - NREL – *Roger Taylor*
  - World Bank - *James Bond*

Approximately two billion people are without access to electricity services and as many as a billion more are poorly served by their electricity systems. International development institutions, especially the World Bank, the United Nations, and bilateral donor organizations are actively engaged in technical assistance and investment activities designed as models for sustainable energy development. While access to electricity does not in itself assure social progress or economic development, it is an essential element of meaningful development. The World Bank has taken on the challenge of developing and co-financing *path-finding projects* that will provide the basis and impetus for application of renewable decentralized energy options on a large scale. NREL is a leader in renewable energy technology development and applications, facilitating practical application of these technologies to unelectrified communities in over 20 countries.